FACT SHEET for Proposed NPDES General Permit

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FACT SHEET

I. Background Information Concerning General Permits and Draft Individual Permits

Section 301(a) of the Clean Water Act (CWA or the Act), U.S.C. 1311(a), provides that the discharge of pollutants to waters of the United States is unlawful except in accordance with the terms of an National Pollutant Discharge Elimination System (NPDES) permit. CWA Section 402, 33 U.S.C. 1342, authorizes EPA to issue NPDES permits allowing discharges on condition they will meet certain requirements, including CWA Sections 301, 304, and 401, 33 U.S.C. 1311, 1314, and 1341.

EPA may issue NPDES permits to operators of individual facilities or general permits to a class of similar dischargers within a discreet geographical area. See generally *NRDC v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977): 40 Code of Federal Regulations (C.F.R.) § 122.28. Issuance of general permits is not controlled by the procedural rules EPA uses for individual permits, but is instead subject to Section 4 of the Administrative Procedure Act (APA), 5 U.S.C. 553, as supplemented by EPA regulations, e.g., 40 C.F.R. § 124.58. EPA must, however, comply with the substantive requirements of the CWA without regard to whether it is issuing an individual or general NPDES permit. In accordance with 40 C.F.R. § 122.28(a)(4)(iii), any owner or operator authorized by a general permit may request to be excluded from the coverage of the general permit by applying for an individual permit. The owner or operator shall submit an application under 40 C.F.R. § 122.21, with reasons supporting the request, to the Director, Water Management Division, U.S. EPA-Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, S.W., Atlanta, GA 30303-8960.

A. Previous Outer Continental Shelf NPDES General Permit

The Regional Administrator for EPA Region 4 is today proposing to reissue the NPDES general permit for the Outer Continental Shelf (OCS) Gulf of Mexico (General Permit No. GMG280000) under Region 4 jurisdiction. The previous permit, published

at 63 FR 55718 (October 16, 1998), issued for the Eastern Planning Area and extreme northeastern portion of the Central Planning Area by Region 4, expired on October 31, 2003.

B. Conclusions Regarding the Supplemental Environmental Impact Statement on Biological Communities in the Coastal Shelf and Shelf-Break Zone

At the time of issuance for the previous NPDES general permit, a final Environmental Impact Statement (EIS) was published. It concluded that, because of the abundance and sensitivity of the biological resources present from 200 meters of depth and shallower and potential secondary impacts, individual permits for these areas which incorporate permit stipulations on a case-by-case review would be more protective of the numerous biological communities present in the 200 meter water depths or shallower, and help ensure compliance with Section 403(c) of the CWA. This strategy required current, or proposed, oil and gas operations shoreward of the 200 meter water depth to seek individual existing source or new source permits, as appropriate. In order to update information used for the final EIS, a draft Supplemental Environmental Impact Statement (SEIS) has been prepared which reviews available data and studies on discharges from oil and gas facilities and the potential for these discharges resulting in impacts to benthic communities of short and long term duration. In particular, the SEIS includes additional information not available at the time of the previous NPDES general permit regarding the environmental impacts for the discharge of synthetic-based drilling fluids (SBFs) which adhere to drill cuttings. The draft SEIS concludes that the discharge of SBFs adhered to drill cuttings do not cause adverse environmental harm to habitats in water depths greater than 200 meters in the Gulf of Mexico.

C. Draft Eastern Gulf of Mexico NPDES General Permit

Today's NPDES general permit covers the Eastern Gulf of Mexico and authorizes discharges from exploration, development, and production facilities (existing sources or

new sources) discharging to Federal waters of the United States. Region 4's coverage area for these general permits includes all discharges occurring in leases occurring in water depths seaward of 200 meters, occurring offshore the coasts of Alabama and Florida. The western boundary of the coverage area is demarcated by Mobile and Visoca Knoll lease blocks located seaward of the outer boundary of the territorial seas from the coasts of Mississippi and Alabama in the Central Planning Area. The eastern boundary of the coverage area is demarcated by the Vernon Basin lease block area north of the 26^{o} parallel (except for those areas under Congressional or Presidential moratorium) and in water depths seaward of 200 meters. This permit does not cover areas included under Congressional or Presidential moratorium for oil and gas activities in Federal waters.

1. New Sources

The Regional Administrator has determined, in accordance with 40 C.F.R. § 122.28(c), that the new source requirements in the general permit will apply to sources that meet the requirements defined at 40 C.F.R. § 122.2 , which states that a new source is "any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which is commenced:

> "(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or
>
> (b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such sources, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal."

If construction was commenced after March 4, 1993, the facility is a new source. Because drilling rigs are moved from site to site for several years and production platforms can be built on shore and transported to an offshore site, the actual construction of the equipment or facility can occur years before there is a discharge of pollutants from that equipment or facility at a particular site. Therefore, the definition

of the "construction" of a new source must be addressed. The regulations at 40 C.F.R. § 122.29(b)(4) state:

> "(4) Construction of a new source as defined under § 122.2 has commenced if the owner or operator has:
>
> (i) Begun, or caused to begin as part of a continuous on-site construction program:
>
> (A) Any placement, assembly, or installation of facilities or equipment; or
>
> (B) Significant site preparation work including clearing, excavation or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new sources facilities or equipment; or
>
> (ii) Entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility engineering, and design studies do not constitute a contractual obligation under the paragraph."

EPA defines "significant site preparation work" as "the process of clearing and preparing an area of the ocean floor for purposes of constructing or placing a development or production facility on or over the site" (50 FR 34619). Therefore, development and production wells are new sources unless the site was prepared for the purposes of constructing or placing a development or production facility over that site before the promulgation of the effluent guideline for the offshore subcategory on March 4, 1993. Exploration activities are not considered significant site preparation work; therefore, exploration wells would not be new sources in any circumstance.

EPA regulations also define the term "site" at 40 C.F.R. § 122.2 as "the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity." EPA interprets the term "water area" to mean the "specific geographical location where the exploration, development, or production activity is conducted, including the water column and ocean floor beneath activities." Thus, if a new platform is built at or moved from a different location, it will be considered a new source when placed at the new site where

its oil and gas activities take place. Even if the platform is placed adjacent to an existing platform, the new platform will still be considered a "new source" occupying a "new water" area, and therefore, a "new site" (50 C.F.R. 34618).

2. Existing Sources

All facilities not meeting the requirements of a new source must obtain coverage as an existing source under the general permit. Existing sources are those facilities where significant site preparation work has occurred, or development and production activity has taken place, on or before March 4, 1993. These same facilities, however, would become new sources if they moved to a new water area to commence production or development activities. Exploratory activities require existing source general permit coverage.

3. Application Procedures

Operators planning to discharge from operating facilities seaward of the 200 water meter depth will be required to file a notice of intent (NOI), pursuant to 40 C.F.R. § 122.28(b)(2)(ii), to be covered by the general permit no later than 14 days prior to discharge and prior to the expiration of the general permit. Such notice fulfills the permit application requirements under federal regulations. The permittee will be covered under the appropriate new general permit (existing or new source) upon receipt of notification of inclusion from the Director. A discharger wanting to obtain coverage under a subsequent general permit must submit a new NOI no later than 14 days from the expiration date of this permit. If the NOI for coverage under a subsequent permit is timely and complete and EPA-Region 4 is unable to issue the intended subsequent permit, then by matter of law, you will be granted continued administrative coverage under this permit until such time that EPA issues a subsequent permit or determines to not reissue the permit. At that time, coverage under this permit ceases.

D. Individual Permits

All lease blocks with operating facilities traversed by, or shoreward of, the 200 meter isobath will be required to apply for and obtain individual permits in order to discharge into waters of the U.S. No individual permits will be issued for non-operational leases until an exploration plan document or a development production plan has been prepared for Mineral Management Service (MMS) and submitted to both MMS and EPA-Region 4.

There are two types of individual permits that will be issued. The first is an individual new source permit. The application requirements for new sources are set forth at 40 C.F.R. § 122.21(k) and (l). Prior to issuance of such permits, the National Environmental Policy Act (NEPA) of 1969 requires that an EIS or Environmental Assessment (EA) be prepared. In order to allow EPA to conduct that review, the applicant must submit information as set forth in 40 C.F.R. § 6.604(b). The Regional Administrator will then make and publish a determination as to whether the facility seeking a permit is a new source.

The second type of individual permit is for an existing source. Applicants shall submit the information required by 40 C.F.R. § 122.21(f), together with any additional information required to determine the appropriate permit limits based on ocean discharge criteria under section 403 of the CWA.

Permittees holding leases shoreward of the 200 meter depth will be given individual notice of the requirement to apply for an individual permit, a brief statement of the reasons therefore, a copy of the application form, and a deadline for filing the application. No applications will be accepted for non-operational or newly acquired leases until such time as an Exploration Plan, Development Operational Coordination Document and/or Development Production Plan has been submitted to EPA. All permittees with operational facilities, i.e., leases on which a discharge has taken place within two (2) years of the effective date of the new general permit, who file a timely

application will continue to be covered under the previous general permit until a final action has been taken on the individual permit application.

E. Oil and Gas Activities in the Eastern Gulf of Mexico

Historically, activity in the Eastern Gulf of Mexico has been less than that in areas west of EPA Region 4's jurisdiction. This was partly due to the demand for natural gas and economics associated with drilling costs necessary to reach the deep Norphlet and other producible commercial formations. As the price and demand for natural gas increases, along with the development of deep water drilling and producing technology, exploration activities in this area will continue. Since the issuance of the previous general permit, however, approximately 200 wells have been granted coverage in the Eastern Gulf of Mexico and most have been in water depths greater than 5,000 feet. During the last MMS lease sale held in December 2001, for Eastern Gulf of Mexico Lease Sale 181, MMS received 190 bids from 14 companies on 95 tracts out of the 256 offered. All 256 sale tracts were in deep water. MMS's next lease sale for blocks within Lease Sale Block 181 will be held in December 2003. Approximately 125 tracts will become available; all are located in depths greater than 6,000 feet.

II. Description of Activity and Facilities Which are Subject of the Draft Permit

The Oil and Gas Extraction Point Source Category (40 C.F.R. Part 435, subpart A) includes facilities engaged in field exploration, development and well production and well treatment. Exploration facilities are fixed or mobile structures engaged in the drilling of wells to determine the nature of potential hydrocarbon reservoirs. A development facility is any fixed or mobile structure engaged in the drilling and completion of productive wells, which may occur prior to, or simultaneously with production operations. Production facilities are fixed or mobile structures engaged in well completion or used for active recovery of hydrocarbons from producing formations.

III. Nature of Discharges from Oil and Gas Operations and Effluent Limits

This general permit will authorize the following discharges to occur in water depths seaward of the 200 meter water depth: water-based drilling muds; water- and synthetic-based drill cuttings; produced water; well treatment fluids; workover fluids; completion fluids; deck drainage, sanitary wastes; domestic wastes, desalinization unit discharges, blowout preventer fluid; fire control system test water; non-contact cooling water; uncontaminated ballast water; uncontaminated bilge water; excess cement slurry; and mud, cuttings and cement at the seafloor. The permit will authorize discharges from facilities engaged in field exploration, development and well production and well treatment, for offshore operations for both existing and new sources occurring seaward of the 200 meter water depth.

The applicable effluent guidelines are found at 40 C.F.R. Part 535, subpart A, which include Best Available Technology Economically Achievable (BAT) limitations for existing sources and New Source Performance Standards (NSPS) that are based on the best available demonstrated technology for new sources. New facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies; therefore, Congress directed EPA to consider the best demonstrated process changes, in-plant controls, and end-of-process control and treatment technologies that reduce pollution to the maximum extent feasible for implementation by new sources.

The U.S. Coast Guard regulations are incorporated into the permit to be consistent with international regulations for the disposal of food and incinerator wastes.

EPA is specifically soliciting information to further characterize present and anticipated activities on the eastern Gulf of Mexico OCS. EPA Region 4 may revise any provisions of the permit in response to public comments when it issues the final permit.

IV. Statutory Basis for Permit Conditions

Sections 301(b), 304, 306, 307, 308, 401, 402, 403 and 501 of the Clean Water Act (The Federal Water Pollution Control Act Amendments of 1972, as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987), 33 U.S.C. 1311, 1314(b), (c) and (e), 1316, 1317, 1318 and 1361; 86 Stat. 816, Pub. L. 92-500; 91 Stat. 1567, Pub. L. 95-217; 101 Stat. 7 Pub. L. 100-4 ("the Act" or CWA"), and the U.S. Coast Guard Regulations (33 C.F.R. Part 151), provide the basis for the permit conditions contained in general permit. The general requirements of these sections fall into three categories, technology bases, ocean discharge criteria and section 308 of the CWA, which are described in sections A - C , below.

A Technology Bases

1. BAT and BCT Effluent Limitations and New Source Performance Standards

As of March 31, 1989, all permits are required by section 301(b)(2) of the Act to contain effluent limitations for all categories and classes of point sources which: (1) control toxic pollutants (40 C.F.R. § 401.15) and non-conventional pollutants through the use of Best Available Technology Economically Achievable (BAT), and (2) represent Best Conventional Pollutant Control Technology (BCT). BCT effluent limitations apply to conventional pollutants (pH, BOD, oil and grease, suspended solids, and fecal coliform).

BAT and BCT effluent limitations guidelines and New Source Performance Standards (NSPS) for the Offshore Subcategory were proposed on August 26, 1985 (50 FR 34592) and signed on January 15, 1993 (58 FR 12454, March 4, 1993 and 66 FR 6850, January 22, 2001). The new guidelines were established under the authority of sections 301(b), 304, 306, 307, 308, and 501 of the CWA. The new guidelines were also established in response to a Consent Decree entered on April 5, 1990 (subsequently modified on May 28, 1993) in *NRDC v. Reilly*, D. D.C. No. 79-3442

(JHP) and are consistent with EPA's Effluent Guidelines Plan under Section 304(m) of the CWA (57 FR 41000, September 8, 1992). The general permit will cover both new and existing sources. Permit limits and conditions for existing sources are based on BAT and BCT effluent limitations and incorporate additional discharge restrictions based on environmental data. Requirements for new sources are based on the NSPS based on the best available demonstrated technology, and incorporate additional discharge restrictions based on environmental data. Since the March 4, 1993, Offshore Effluent Guidelines and New Source Performance Standards basically set BAT limitations equal to NSPS, the proposed limitations, conditions, and monitoring requirements for today's proposed permit limits for existing and new sources are identical.

2. Previous NPDES General Permit Limitations

Per Section 402(o)(1) of the Clean Water Act and 40 C.F.R. § 122.44(l), when a permit is reissued, the effluent limitations must be as stringent as the final effluent limitations of the previous permit unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. Based on new information not available at the time of issuance for the previous general permit, the new general permit contains new limits pertaining to the discharge of non-aqueous-based drilling fluids (NAFs) that adhere to drill cuttings. Part V of the fact sheet discusses the new or changed permit limitations and conditions.

B. Ocean Discharge Criteria

Section 403 of the CWA requires that an NPDES permit for a discharge into marine waters located seaward of the inner boundary of the territorial seas (i.e., state and federal offshore waters) be issued in accordance with guidelines for determining the potential degradation of the marine environment. These guidelines, referred to as the Ocean Discharge Criteria (40 C.F.R. Part 125, subpart M), and section 403 of the Act are intended to "prevent unreasonable degradation of the marine environment and

to authorize imposition of effluent limitations, including a prohibition of discharge, if necessary, to ensure this goal" (49 FR 65942, October 3, 1980).

If EPA determines that the discharge will cause unreasonable degradation, an NPDES permit will not be issued. If a definitive determination of no unreasonable degradation cannot be made because of insufficient information, EPA must then determine whether a discharge will cause irreparable harm to the marine environment and whether there are reasonable alternatives to on-site disposal. To assess the probability of irreparable harm, EPA is required to make a determination that the discharger, operating under appropriate permit conditions, will not cause permanent and significant harm to the environment during a monitoring period in which additional information is gathered. If data gathered through monitoring indicate that continued discharge may cause unreasonable degradation, the discharge shall be halted or additional permit limitations established.

A preliminary Ocean Discharge Criteria Evaluation has been drafted. Region 4 has determined that discharges occurring under the draft NPDES general permit, incorporating appropriate effluent limits and monitoring requirements, will not cause unreasonable degradation for existing and new source dischargers occurring in areas seaward of the 200 meter water depth.

C. Section 308 of the Clean Water Act

Under section 308 of the CWA and 40 C.F.R. § 122.44(i), the Director of the U.S. EPA-Region 4 Water Management Division must require a discharger to conduct monitoring to determine compliance with effluent limitations and to assist in the development of effluent limitations. EPA has included several monitoring requirements in the permit, as listed in the Table 1 of this fact sheet.

V. Summary of New or Changed Permit Limitations and Conditions

The following discussion is intended to provide a summary of the parts of the proposed permit which are substantively different from the previous 1998 general permit. For a detailed discussion of requirements and their bases, please refer to Section VI of this fact sheet. Many of the new and changed requirements result from amendments of the final Effluent Limitations Guidelines and New Source Performance Standards for the Offshore Subcategory published in January, 2001 (66 FR 6850) (see 40 C.F.R. Part 435, subpart A) that address the discharge of synthetic-based drilling fluids (SBFs) and other non-aqueous drilling fluids from oil and gas drilling operations into waters of the United States.

A. Discharge of Non-Aqueous-Based Drilling Fluids

BAT and BCT requirements in the aforementioned amendments to 40 C.F.R. Part 435, state that the discharge of non-aqueous based drilling fluids (NAFs) be prohibited, except that which adheres to cuttings and as a small volume discharge. NAFs may be used as a carrier fluid (transporter fluid), lubricity additive or pill in water-based drilling fluids and discharged with those drilling fluids, provided the discharge continues to meet the no free oil and 96-hour LC_{50} toxicity limits, and the pill is removed prior to discharge.

B. Drill Cuttings Associated with Non-Aqueous-Based Drilling Fluids

The discharge of SBFs and other NAFs associated with drill cuttings from oil and gas drilling operations are controlled, as follows:

1. Drilling Fluid Stock Limitations (C_{16}-C_{18} Internal Olefin, C_{12}-C_{14} esters and C_8 ester)

BAT limitations and NSPS require that the synthetic materials which form the base fluid of the SBFs shall meet limitations and standards on polynuclear aromatic hydrocarbons (PAH) content, sediment toxicity and biodegradation. In addition, there are limits on the stock barite for mercury and cadmium content. Materials not meeting

the stock limitations must be substituted for ones that will, or not be discharged. The supplier(s) should be able to document that the stock base fluid being used on the well will meet the appropriate limits.

a. PAH Content

PAHs are comprised of toxic priority pollutants (fluorene, naphthalene, pheneanthrene, etc.). However, typical SBFs do not contain PAHs, but the traditional base fluids of oil-based drilling fluids (OBFs) of diesel and mineral oil may contain up to 10% PAH. The PAH limitation is a mass ratio of $1x10^{-5}$, and is determined using EPA Method 1654A , in conjunction with the following equation:

$$\text{PAH mass ratio} = \frac{\text{mass (g) of PAH (as phenanthrene)}}{\text{mass (g) of stock base fluid}}$$

The limit is used to help discriminate between acceptable and non-acceptable base fluids. Monitoring for this parameter shall be performed at least once per year on each fluid blend.

b. Sediment Toxicity

Sediment toxicity in the base fluid will be used as a non-conventional pollutant parameter and as an indicator for toxic pollutants and non-conventional pollutants. By establishing limits on toxicity, the use of less toxic drilling fluids and additives is encouraged. Generally, SBFs are less toxic than OBFs, but within the SBF category, some base fluids are more toxic than others. A 10-day LC_{50} sediment toxicity test (ASTM E1367-92,or the most current EPA approved method) is used to determine compliance with a sediment toxicity ratio permit limit of 1.0. The ratio calculation is as follows:

$$\text{Sediment Toxicity Ratio} = \frac{\text{10-day } LC_{50} \text{ of } C_{16}\text{-}C_{18} \text{ internal olefin}}{\text{10-day } LC_{50} \text{ of stock base fluid}}$$

Monitoring for the parameter shall be performed at least once per year on each fluid blend.

c. Biodegradation Rate

The biodegradation in base fluids is an indicator of the extent, in level and duration, of the toxic effect of toxic pollutants and non-conventional pollutants present in the base fluids. The biodegradation parameter correlates with rate of recovery of the sea bottom where SBFs associated cuttings have been discharged. The biodegradation rate ratio of the stock base fluid will be measured using International Standards Organization (ISO) Method 11734:1995 (or the most current EPA approved method) with a limit of 1.0. The ratio equation is:

$$\text{Biodegradation rate ratio} = \frac{\text{Cumulative gas production (ml) of } C_{16}\text{-}C_{18} \text{ internal olefin at 275 days}}{\text{Cumulative gas production (ml) of stock base fluid at 275 days}}$$

Monitoring for the parameter shall be performed at least once per year on each fluid blend.

d. Mercury and Cadmium in Stock Barite

There shall be no discharge of drilling fluids to which barite has been added, if such barite contains mercury in excess of 1.0 mg/kg (dry weight) or cadmium in excess of 3.0 mg/kg (dry weight). The permittee shall analyze a representative sample of all stock barite used once, prior to drilling each well, and submit the results for total mercury and cadmium on the Discharge Monitoring Report (DMR).

2. Discharge Limitations

BAT and NSPS require that the discharge of SBFs associated drill cuttings be controlled by limiting both fluid toxicity (i.e, suspended particulate phase toxicity), sediment toxicity and the percentage of base fluids retained on the cuttings.

a. Suspended Particulate Phase (SPP) Toxicity

The minimum 96-hour LC_{50} of the SPP Toxicity Test shall be 3% by volume. Monitoring shall be once per month and once again at the end-of-well drilling. The approved methodology is contained in Appendix 2 of 40 C.F.R. Part 435, subpart A.

b. Drilling Fluid Sediment Toxicity

The use of sediment toxicity test at the point of discharge is a practical indicator of the drilling fluid toxicity immediately prior to discharge. The test will control non-conventional pollutants found in some drilling fluid components that are added to the base fluid to formulate the desired SBF. The test used on the stock base fluid can be modified to a 96-hour test to allow the operator to continue drilling operations while the sediment toxicity test is performed on the discharged cuttings associated drilling fluid. The approved test method is ASTM E1367-92. The drilling fluid sediment toxicity ratio is determined using the following equation:

$$\text{Drilling Fluid Sediment Toxicity ratio} = \frac{\text{4-day } LC_{50} \text{ of } C_{16}\text{-}C_{18} \text{ internal olefin}}{\text{4-day } LC_{50} \text{ of drilling fluid removed from the solids control equipment}}$$

the drill cuttings at

Monitoring for this parameter shall be once per month.

c. Base Fluid Retained on Cuttings

The BAT limitation and NSPS to control the retention of SBFs on cuttings is based on a ratio of base fluid on wet cuttings to the mass of wet cuttings averaged over the entire footage of the well drilled with SBF. The limitation and standard controls the quantity of drilling fluid discharged with the drill cuttings. Both toxic pollutants and non-conventional pollutants would be controlled by this limitation. This limitation will also control the biodegradation rate of the discharged SBF, and the potential for cuttings to develop piles and mats which are harmful to the benthic environment.

For NAFs that meet the stock limitation of C_{16}-C_{18} internal olefin, the maximum weighted mass ratio averaged over all NAF well sections shall not exceed 6.9 g NAF base fluid per 100 g of wet drill cuttings. For NAFs that meet the stock limitation of C_{12}-C_{14} ester or C_8 ester, the maximum weighted mass ratio averaged over all NAF well sections shall not exceed 9.4 g NAF base fluid per 100 g of wet drill cuttings.

In accordance with effluent guidelines for SBFs and other NAFs, a default value of 14% of base fluid retained on drill cuttings may be used for determining compliance with the base fluids retained on cutting limit where seafloor discharges are made from dual gradient drilling. In those cases, 15% will be used as a default value for the mass fraction of cuttings discharged at the sea floor. The default values will be averaged with results obtained from daily monitoring of the surface discharge to determine compliance with the retention limitations. Monitoring for this parameter shall be at least once per day, or one sample per 500 feet drilled, up to three samples per day.

3. Prohibitions

a. Free Oil Prohibition

Under this prohibition, drill cuttings may not be discharged when the associated drilling fluid would fail the static sheen test. This limitation is intended to minimize the formation of sheens on the surface of the receiving water by oil and grease, which separates from the SBF. The oleaginous matrices of SBFs do not disperse in water and rise to the surface.

b. Formation Oil Prohibition

Formation oil is an indicator pollutant for the many toxic and priority pollutant pollutants present in naturally occurring formation (crude) oil. These pollutants include benzene, toluene, ethylbenzene, naphthalene, phenanthrene, and phenol. Since SBF fluids are recycled and used more than once, the SBF will need to be tested twice to determine that it is free of formation oil. The SBF should be tested before initial use and again during the drill cuttings discharge phase on the fluid recovered by the solids control system.

c. Discharge Near Areas of Biological Concern

The previous general permit prohibited drilling activities within 1000 meters of areas of biological concern (ABC). Based on new information, it may possible to drill within 1000 meters of ABC and maintain the integrity of the area. Therefore, the

proposed permit will prohibit drilling activities within 1000 meters of ABC, unless otherwise authorized by the Director of the Water Management Division, EPA-Region 4 .

d. Discharge Near Federally Designated Dredge Material Disposal Sites

To ensure the biological integrity of aquatic communities near ocean disposal sites, this new permit conditions prohibits the discharge of any wastewaters within 1000 meters of a Federally Designated Dredge Material Disposal Site. The list of sites located in the general permit area are cited at 40 C.F.R. § 228.15(f).

C. Special Conditions

1. De Minimus Discharges of Non-Aqueous Based Drilling Fluids

De minimus discharges of NAFs not associated with cuttings shall be contained to the extent practicable to prevent discharge. Allowable de minimus discharges can include wind blown drilling fluids from the pipe rack and minor drips and splatters around mud handling and solids control equipment. Such de minimus discharges are not likely to be measurable and are not considered in the base fluids retained on cuttings limit.

2. Small Volume Discharges

Small volume drilling fluid discharges which are associated with cuttings, and for which discharge is authorized, are; (1) displaced interfaces, (2) accumulated solids in sand traps, (3) pit clean-out solids and/or, (4) centrifuge discharges made while changing mud weight. Operators discharging small volume NAF-cuttings which do not occur during a NAF-cuttings discharge sampling interval must either; (1) measure the mass percent NAF base fluid retained on the cuttings for each small volume NAF-cuttings discharge, or (2) use a default value of 25% NAF base fluid retained on the cuttings to determine compliance.

D. Best Management Practices Plan and Site Specific BMPs

The requirement to develop and implement a Best Management Practices (BMP) plan has been incorporated into the general permit in accordance with Sections 304(e) and 316(b) of the CWA in order to reduce the likelihood of spills or other releases oil or oil contaminated water, water treatment chemicals, cleaning materials and biocides that may enter waters of the United States. Both facility-wide and specific BMPs for NAFs have been incorporated. Requirements have also been included for permittees to evaluate cooling water intake structures to determine opportunities for reducing impingement and entrainment of organisms.

E. New or Revised Definitions

The following definitions were either incorporated based on amendments of the final Effluent Limitations Guidelines and New Source Performance Standards for the Offshore Subcategory in January, 2001 (66 FR 6850), or included for clarification purposes.

1. Annual average means the average of all discharges sampled and/or measured during a calendar year in which daily discharges are sampled and/or measured, divided by the number of discharges sampled and/or measured during such year.

2. Applicable effluent standards and limitations means all state and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards or performance, toxic effluent standards and prohibitions, and pretreatment standards.

3. Areas of Biological Concern (revised) for water within the territorial seas (shoreline to three miles offshore) are those defined as “no activity zones” for biological reasons by the states of Alabama, Florida and Mississippi. For offshore waters seaward of three miles, areas of biological concern include “no activity zones” defined by the Department of Interior (DOI) for biological reasons, or identified by EPA in consultation with the DOI, the states, or other interested federal agencies, as containing biological communities, features or

functions that are potentially sensitive to discharges associated with the oil and gas industry.

4. Base fluid means the continuous phase or suspending medium of a drilling fluid formation.

5. Base fluid retained on cuttings refers to the American Petroleum Institute Recommended Practice 13B-2 supplemented with the specifications, sampling methods, and averaging method for retention values provided in 40 C.F.R. Part 435, subpart A, Appendix 7.

6. Biodegradation rate refers to the ISO method no. 11734:1995 (or the most current EPA approved method), "Water quality - Evaluation of the ultimate anaerobic biodegradation of organic compounds in digested sludge-method by measurement of the biogas production (1995 edition)," supplemented with modifications in Appendix 4 of 40 C.F.R. Part 435, subpart A.

7. Blow-Out Preventer Control Fluid means fluid used to actuate the hydraulic equipment on the blow-out preventer or subsea production wellhead assembly.

8. Boiler Blowdown means discharges from boilers necessary to minimize solids build-up in the boilers, including vents from boilers and other heating systems.

9. Bulk Discharge means any discharge of a discrete volume or mass of effluent from a pit tank or similar container that occurs on a one-time, infrequent or irregular basis.

10. C_{12}-C_{14} Ester and C_8 Ester means the fatty-acid/2-ethylhexyl esters with carbon chain lengths ranging from 8 to 16 and represented by the Chemical Abstracts Service (CAS) No. 135800-37-2.

11. C_{16}-C_{18} Internal Olefin means a 65/35 blend, proportioned by mass, of hexadecene and octadecene, respectively. Hexadecene is an unsaturated hydrocarbon with a carbon chain length of 16, an internal double carbon bond,

and is represented by the CAS No. 26952-14-7. Octadecene is an unsaturated hydrocarbon with a carbon chain length of 18, an internal double carbon bond, and is represented by CAS No. 27070-58-2.

12. C_{16}-C_{18} Internal Olefin Drilling Fluid means a C_{16}-C_{18} internal olefin drilling fluid formulated as specified in Appendix 8 of 40 C.F.R. Part 435, subpart A.

13. Deck Drainage means any waste resulting from deck washings, spillage, rainwater, and runoff form gutters and drains including drip pans and work areas within facilities subject to this permit.

14. Development Drilling means the drilling of wells required to efficiently produce a hydrocarbon formation or formations.

15. Development Facility means any fixed or mobile structure that is engaged in the drilling of productive wells.

16. Diesel oil (revised) refers to the grade if distillate fuel oil, as specified in the American Society of Testing and Materials Standard Specifications for Diesel Fuel Oils, no. D975-91, that is typically used as the continuous phase in conventional oil-based drilling fluids.

17. Domestic waste (revised) means materials discharged from sinks, showers, laundries, safety showers, eye-wash stations, hand-wash stations, fish cleaning stations, and galleys located within facilities subject to 40 C.F.R. Part 435, subpart A.

18. Drill cuttings (revised) means the particles generated by drilling into subsurface geologic formations, including cured cement, and carried out from the wellbore with the drilling fluid. Examples of drill cuttings include small pieces of rock varying in size and texture from fine silt to gravel. Drill cuttings are generally generated from solids control equipment and settle out and accumulate in quiescent areas in the solids control equipment or the equipment processing drilling fluid (i.e, accumulated solids).

a. Wet drill cuttings means the unaltered drill cuttings and adhering drilling fluid and formation oil carried out from the wellbore with the drilling fluid.

b. Dry drill cuttings means the residue remaining in the retort vessel after completing the retort procedure specified in Appendix 7 of 40 C.F.R. Part 435, subpart A.

19. Drilling fluid (revised) means the circulating fluid (mud) used in the rotary drilling of wells to clean and condition the hole and to counterbalance formation.

a. Water-based drilling fluid means the continuous phase and suspending medium for solids is a water-miscible fluid, regardless of the presence of oil.

b. Non-aqueous drilling fluid means the continuous phase and suspending medium for solids is a water-immiscible fluid, such as oleaginous materials (e.g., mineral oil, paraffinic oil, C_{16}-C_{18} internal olefins, and C_8-C_{16} fatty acid/2-ethylhexyl esters).

i. Oil-based means the continuous phase of the drilling fluid consists of diesel oil, mineral oil, or some other oil, but contains no synthetic material or enhanced mineral oil.

ii. Enhanced mineral oil-based means the continuous phase of the drilling fluid is enhanced mineral oil.

iii. Synthetic-based means the continuous phase of the drilling fluid is a synthetic material or a combination of synthetic materials.

20. End-of- well Sample means the sample taken after the final log run is completed and prior to bulk discharge. This term does not apply to any discharges other than water based drilling fluids.

21. Enhanced mineral oil as applied to enhanced mineral-oil based drilling fluid means a petroleum distillate which has been highly purified and is distinguished from diesel oil in having a lower PAH content. Typically, conventional mineral

oils have a PAH content on the order of 0.35 weight percent expressed as phenanthrene, whereas enhanced mineral oils typically have a PAH content of 0.001 or lower weight percent PAH expressed as phenanthrene.

22. Exploratory facility means any fixed or mobile structure subject to 40 C.F.R. Part 435, subpart A, that is engaged in the drilling of wells to determine the nature of potential hydrocarbon reservoirs.

23. Formation oil means the oil from a producing formation which is detected in the drilling fluid, as determined by Gas Chromatography/Mass Spectrometer (GC/MS) compliance assurance method specified in Appendix 5 of 40 C.F.R. Part 435, subpart A, when the drilling fluid is analyzed before being shipped offshore, and as determined by the Reverse Phase Extraction (RPE) method specified in Appendix 6 of 40 C.F.R. Part 435, subpart A, when the drilling fluid is analyzed at the offshore point of discharge. Detection of formation oil by the RPE method may be confirmed by the GC/MS method, and the results of the GC/MS compliance assurance method shall supercede those of the RPE method.

24. Maximum as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings means the maximum concentration allowed as measured in any single sample of the barite for determination of cadmium and mercury content.

25. Maximum for any one day as applied to BCT and BAT effluent limitations and NSPS for oil and grease in produced water means the maximum concentration allowed as measured by the average of four grab samples collected over a 24-hour period that are analyzed separately. Alternatively, for BAT and NSPS the maximum concentration allowed may be determined on the basis of physical composition of the four grab samples prior to a single analysis.

26. Maximum weighted mass ratio averaged over all NAF well sections for BAT effluent limitations and NSPS for base fluid retained on cuttings means the weighted average base fluid retention for all NAF well sections, as determined by the API Recommended Practice 13B-2, using the methods and averaging calculations presented in Appendix 7 of 40 C.F.R. Part 435, subpart A.

27. Method 1654A refers to the method "PAH Content of Oil by High Performance Liquid Chromatography with a UV Detector," which was published in Methods for the Determination of Diesel, Mineral and Crude Oils in Offshore Oil and Gas Industry Discharges, EPA-821-R-92-008 (incorporated by reference and available from the National Technical Information Service).

28. Minimum as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings means the minimum 96-hour LC_{50} value allowed as measured in any single sample of the discharged waste stream. Minimum as applied to BCT effluent limitations and NSPS for sanitary wastes means the minimum concentration value allowed as measured in any single sample of the discharged waste stream.

29. Ninety-Six (96)-hour LC_{50} means the concentration (parts per million) or percent of the suspended particulate phase (SPP) from a sample that is lethal to 50 percent of the test organisms exposed to that concentration of the SPP after 96 hours of constant exposure.

30. No discharge of free oil means that waste streams may not be discharged that contain free oil as evidenced by monitoring method specified for that particular stream, e.g., deck drainage or miscellaneous discharges cannot be discharged when they would cause a film or sheen upon or discoloration of the surface of the receiving water; drilling fluids or cuttings may not be discharged when they fail the static sheen test defined in Appendix 1 of subpart A of 40 C.F.R. Part 435.

31. Operational waste means all cargo associated waste, maintenance waste, cargo residues, and ashes and clinkers from incinerators and coal burning boilers.

32. PAH (as phenanthrene) means polynuclear aromatic hydrocarbons reported as phenanthrene.

33. Parameters that are regulated by this permit and listed with approved methods of analysis in Table 1.B at 40 C.F.R. § 136.3 are defined as follows:

a. Cadmium means total cadmium.

b. Chlorine means total residual chlorine.

c. Mercury means total mercury.

d. Oil and Grease means total recoverable oil and grease.

34. Produced Sand (revised) means the slurried particles used in hydraulic fracturing, the accumulated formation sands and scales particles generated during production. Produced sand also includes desander discharge from the produced water waste stream, and blowdown of the water phase from the produced water treating system.

35. Produced Water (revised) means the water (brine) brought up from the hydrocarbon-bearing strata during the extraction of oil and gas, and can include formation water, injection water, and any chemicals added downhole or during the oil/water separation process.

36. Production facility means any fixed or mobile structure subject to this subpart that is either engaged in well completion or used for active recovery of hydrocarbons from producing formations. It includes facilities that are engaged in hydrocarbon fluids separation even if located separately from wellheads.

37. Sediment Toxicity as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings refers to the ASTM E1367-92 method: Standard Guide for Conducting 10-day Static Sediment Toxicity Tests with Marine and

Estuarine Amphipods with *Leptocheirus plumulosus* as the test organism and sediment preparation procedures specified in Appendix 3 of 40 C.F.R. Part 435, subpart A.

38. Solids Control Equipment means shale shakers, centrifuges, mud cleaners, and other equipment used to separate drill cuttings and/or stock barite solids drilling fluid recovered from the wellbore.

39. SPP toxicity as applied to BAT effluent limitations and NSPS for drilling fluids and drill cuttings refers to bioassay test procedure presented in Appendix 2 of subpart A of 40 C.F.R. Part 435.

40. Static sheen test means the standard test procedure that has been developed for this industrial subcategory for the purpose of demonstrating compliance with the requirement of no discharge of free oil. The methodology for performing the static sheen test is presented in Appendix 1 of subpart A of 40 C.F.R. Part 435.

41. Stock barite means the barite that was used to formulate a drilling fluid.

42. Stock base fluid means the base fluid that was used to formulate a drilling fluid.

43. Synthetic material as applied to synthetic-based drilling fluid means material produced by the reaction of specific purified chemical feedstock, as opposed to the traditional base fluids such as diesel and mineral oil which are derived from crude oil solely through physical separation processes include fractionation and distillation and/or minor chemical reactions such as cracking and hydro processing. Since they are synthesized by the reaction of purified compounds, synthetic materials suitable for use in drilling fluids are typically free of PAHs but are sometimes found to contain levels of PAH up to 0.001 weight percent PAH expressed as phenanthrene. Internal olefins and vegetable esters are two examples of synthetic materials suitable for use by the oil and gas extraction

industry in formulating drilling fluids. Internal olefins are synthesized from the isomerization of purified straight-chain (linear) alpha olefins. C_{16-18} linear alpha olefins are unsaturated hydrocarbons with the carbon to carbon double bond in the terminal position. Internal olefins are typically formed from heating linear alpha olefins with a catalyst. The feed material for synthetic linear alpha olefins is typically purified ethylene. Vegetable esters are synthesized from the acid-catalyzed esterification of vegetable fatty acids with various alcohols. EPA listed these two branches of synthetic fluid base materials to provide examples, and EPA does mean to exclude other synthetic materials that are either in current use or may be used in the future. A synthetic-based drilling fluid may include a combination of synthetic materials.

44. Treatment Chemicals means biocides, corrosion inhibitors, or other chemicals which are used to treat seawater or freshwater to prevent corrosion or fouling of piping or equipment. Chemicals or compounds approved by EPA-Region 4 in accordance with Part I.C.6 ("Toxic Compounds") are not considered treatment chemicals.

45. Uncontaminated freshwater means freshwater which is discharged without the addition of treatment chemicals. Included are; (1) discharges of excess freshwater that permit the continuous operation of fire control and utility lift pumps, (2) excess freshwater from pressure maintenance and secondary recovery projects, (3) water released during training and testing of personnel in fire protection, and (4) water used to pressure test new piping.

46. Uncontaminated seawater (revised) means seawater which is returned to the sea without the addition of treatment chemicals. Included are; (1) discharges of excess seawater which permit the continuous operation of fire control and utility lift pumps, (2) excess seawater from pressure maintenance and secondary recovery projects, (3) water released during training and testing of personnel in

fire protection, (4) water used to pressure test new piping and (5) non-contact cooling water which has not been treated with biocides.

47. Well completion fluids means salt solutions, weighted brines, polymers, and various additives used to prevent damage to the well bore during operations which prepare the drilled well for hydrocarbon production.

48. 96-hour LC_{50} means the concentration (parts per million) or percent of the suspended particulate phase (SPP) from a sample that is lethal to 50 percent of the test organisms exposed to that concentration of the SPP after 96 hours of constant exposure.

F. Toxic Compounds (Including Compounds Used In Subsea Operations)

The permittee shall notify the Director, Water Management Division, EPA-Region 4 in writing at least 14 days prior to planned use and discharge of any chemical, other than chlorine or other product previously reported to the Director, which may be toxic to aquatic life. Such notification shall include:

1. Name and general composition of the chemical;

2. Frequencies of use;

3. Quantities to be used;

4. Proposed discharge concentrations; and

5. Any acute and chronic toxicity data (Laboratory reports shall be prepared according to Section 12 of EPA document no. EPA/821-R-02-012 entitled, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters for Freshwater and Marine Organisms*, or the most current edition).

Discharge of materials subject to this part is prohibited prior to EPA approval.

G. Notification Requirements

The requirements to submit a Notice to Drill (NTD) and a Notice of Commencement of Operations (NCO) have been replaced with a requirement for operators to submit a “No Activity” list with the quarterly submittal of Discharge

Monitoring Reports (DMRs). Operators were previously required to submit an NTD and an NCO in order for EPA to track drilling activities. The "No Activity" list will serve as less burdensome and more concise way to notify EPA of all the operations that are in a no discharge status.

H. Sampling Frequency of Free Oil for Drilling Fluids and Cuttings

Based on new information that shows that it is impractical to sample for free oil prior to discharge, the frequency for sampling free oil for drilling fluids and drill cuttings has been changed from "prior to discharges on each day of discharge" to "once per week."

I. Frequency of Submittal of Discharge Monitoring Reports

As required in the previous general permit, facilities with discharges will fill out a DMR each month; however, the frequency for submittal of the DMR is being reduced from monthly to quarterly.

J. Test Methods for Analyzing Cadmium and Mercury in Stock Barite

A correction has been made in the EPA test methods used for the analysis of cadmium and mercury in stock barite. The previous permit required operators use the flame and flameless Atomic Absorption Spectrophotometry (AAS) method listed in 40 C.F.R. Part 136 to analyze mercury and cadmium in barite. These methods are suited for constituents in the a water phase, and are therefore inappropriate for use in analyzing barite, which is a solid material. The proposed permit requires use of EPA methods used for solid wastes - EPA SWA 846 method no. 7471A for mercury and EPA SW A846 method no. 6010B for cadmium.

K. Discharges Associated with Dual Gradient Drilling Operations

Requirements for operators employing dual gradient drilling have been incorporated into the draft permit. The new permit conditions are based on requirements in effluent guidelines for the discharge of SBFs (ref. 66 FR 6850, dated January 22, 2001).

L. Use of High Resolution Acoustic Data in Lieu of Photodocumentation

This new provision allows the use of high resolution acoustic data (sidescan sonar) obtained by the leasees or operators for lease or site-specific surveys in compliance with Minerals Management Service requirements as per Notice To Leasees (NTL) No. 2002-G08 *Information Requirements for Exploration Plans and Development Operations Coordination Documents* in lieu of photodocumentation required under the 1998 Outer Continental Shelf (OCS) General Permit. Sidescan sonar data will be obtained by survey methods described in NTL No. 98-20 *Shallow Hazards Requirements*. EPA will consider all natural or artificial hard structure detected by acoustic data to be live-bottom unless other data (i.e,. video, still photographs, diver visual etc.) determines otherwise. Leasees and operators choosing to continue providing photodocumentation will continue to conduct such surveys as per NTL No. 99-G16, *Live-Bottom Surveys and Reports*. Final siting of proposed outfalls must be no further than 500 meters from the proposed surface location covered by imaging survey.

M. Miscellaneous Discharges

This new provision has been included to allow the following miscellaneous discharges, based on prior approval from EPA (see Part III.3.6 -"Toxic Compounds Used in Subsea Operations"): subsea wellhead preservation fluids, subsea production control fluids, umbilical steal tune storage fluid, leak tracer fluid, riser tensioner fluid and hydrates fluid used in subsea hydrostatic tests.

N. Produced Water Toxicity

The proposed permit requires operators that use a horizontal diffuser or multiple discharge ports (e.g.,vertical diffuser) in order to increase mixing to determine the critical dilution using the CORMIX2 model (for horizontal diffusers) or the CORMIX1 model (for vertical diffusers).

O. Seabed Surveys

Operators who discharge drill cuttings which are generated using NAFs shall conduct seabed surveys at each location where such a discharge occurs. Results of the

seafloor surveys shall be submitted to EPA Region 4 with the DMR no later than two years after completion of the drilling operations at the site.

At a minimum, the survey must include; the area and thickness of drill cuttings depositions on the seafloor, analysis of the toxicity of the cuttings depositions on the seafloor, analysis of contaminants present in the deposited cuttings, and analysis of the benthic populations present at the site of cuttings deposition. Monitoring shall be conducted twice at each site where drill cuttings generated using NAFs are discharged. The first survey is required to commence within two weeks after completion of drilling operations. A second survey shall commence one year after completion of the first survey. In addition, both surveys shall be accompanied by sampling of the seafloor benthic populations and analysis for contaminant at a site which is located near the discharge, but sufficiently far as to be unaffected by the discharged drill cuttings or any drilling fluids retained on the cuttings.

Operators shall also monitor the discharge of drill cuttings while drilling is conducted. That monitoring will include; the dates discharge takes place, the prevailing current during discharge, the volumes and types of drilling fluids retained on cuttings and discharged, the volume of cuttings discharged, and a chemical analysis of drilling fluids used at the facility.

Alternatively, operators required to conduct seafloor surveys under this permit may submit a plan for an equivalent industry-wide seafloor monitoring study to EPA Region 4 for approval. The alternative industry-wide study shall be designed to provide information on discharges of cuttings generated using non-aqueous based drilling fluids at a minimum of eight locations where the discharge occurs. At least three of those discharge locations must be in deep water (greater than 1000 feet). Monitoring shall include the areal extent and thickness of cuttings deposition, the sediment chemistry and mineralogy, and the extent of anoxic effects resulting from cuttings discharges. Sampling conducted in shallow areas shall include extensive biological sampling

intended to measure community structural changes relative to cuttings discharges as well as the physical and chemical monitoring performed in deep water. Detailed information regarding the volume and types of drilling fluids and the cuttings discharged shall also be recorded and reported with the results of such a study. If EPA Region 4 approves the equivalent seafloor monitoring study, monitoring conducted under the study shall constitute compliance with the seafloor survey requirements of this permit for those operators who participate. The industry-wide survey currently underway will be given consideration for meeting this requirement.

P. Standard Conditions for NPDES Permits

The standard language for all NPDES permits has been updated.

Q. Clarifications

a. The draft permit clarifies that operators that have passed six consecutive bi-monthly toxicity tests, during a 12-month period, for produced water discharges, and therefore have reduced the testing frequency from bi-monthly to once every six months, may continue testing once every six months. If at any time the semi-annual testing indicates a failure, the toxicity testing frequency may be increased, based upon notification by EPA.

b. The draft permit clarifies requirements for obtaining coverage under an administratively continued permit and for obtaining coverage under a reissued permit.

c. The permit states, unless otherwise specified, that all samples must be taken at "the nearest accessible location prior to discharge, or prior to combining with any other wastewaters".

VI. Permit Conditions

A. Determination of Discharge Conditions

The determination of appropriate conditions for each discharge was accomplished through:

1. consideration of technology-based effluent limitations to control conventional pollutants under BCT,
2. consideration of technology-based effluent limitations to control toxic and non-conventional pollutants under BAT,
3. consideration of technology-based effluent limitations to control toxic and non-conventional pollutants under NSPS,
4. consideration of more stringent permit conditions of existing general permit in accordance with Section 402(o)(1) of the CWA.
5. evaluation of the Ocean Discharge Criteria for discharges in the Offshore Subcategory (given conditions 1 thru 4 are in place).

EPA first determines which technology-based limits are required and then evaluates the effluent quality expected to result from these controls. If water quality violations could occur as a result of discharge, EPA must include water quality-based limits in the permit. The permit limits will reflect the most stringent limits (technology-based or water quality-based). Finally, an Ocean Discharge Criteria Evaluation (ODCE) has been prepared to identify any additional impacts created by these proposed discharges.

General area and depth related requirements and CWA Section 403(c) flow rate requirements for are discussed in section VI.B. and VI.C of this fact sheet. For convenience, these conditions and the regulatory basis for each are cross-referenced by discharge in Table 1 below:

TABLE 1 - Summary of CWA Statutory Basis for Wastewater Discharges

Discharge and Permit Conditions	CWA Statutory Basis / Existing Sources	CWA Statutory Basis / New Sources
Water-Based Drilling Muds & Cuttings		
Flow Rate Limitations	§ 403	§ 403
Volume (bbl/day)	§ 308	§ 308
Toxicity of Drilling Muds	BPJ-BAT	NSPS
No Free Oil Discharge	BPJ-BCT, BPJ-BAT	NSPS
No Oil Based Fluids Discharge	BPJ-BCT, BPJ-BAT	NSPS
Mercury & Cadmium in Barite	BAT	NSPS
> 200 meters - No Unreasonable Degradation	§ 403	§ 403, EIS
> 1000 meters from Area of Biological Concern - No Unreasonable Degradation	§ 403	§ 403

Non-Aqueous_Based Drilling Fluids (NAFs) and Cuttings		
No discharge of NAFs (except that which adheres	BCT	NSPS
to cuttings & small volume discharges)	§ 308 BAT	§ 308 NSPS
Volume (bbls/day)	BAT	NSPS
Mercury & Cadmium in Barite	BAT	NSPS
Polynuclear Aromatic Hydrocarbons (base fluid)	BAT BAT	NSPS NSPS
Sediment Toxicity (base fluid and effluent)	BAT BAT	NSPS NSPS
Biodegradation Rate (base fluids)	BAT	NSPS
No Free Oil Discharge	BCT	NSPS
No Formation Oil Discharge	BAT	NSPS
Effluent Toxicity	BAT	NSPS
Base fluid retained on cuttings	§ 403	§ 403
No discharge of cuttings generated using contaminated drilling fluids, containing diesel oil or mineral oil	BPJ	BPJ
> 1000 meters from Area of Biological Concern	BPJ	BPJ
No Unreasonable Degradation	BPJ	BPJ
No Discharge of Floating Solids or Foam	BPJ	BPJ
No Discharge of Halogenated Phenol Compounds	BPJ	BPJ
Produced Water		
Monitor Flow (MGD)	§ 308	§ 308
Oil & Grease	BCT, BAT	NSPS
Whole Effluent Toxicity (WET)	BPJ	BPJ
> 200 meters - No Unreasonable Degradation	§ 403 § 403	§ 403, EIS § 403
> 1000 meters from Area of Biological Concern - No Unreasonable degradation	BPJ	BPJ

Well Treatment, Completion, & Workover Fluids Monitor Frequency/Flow Rate No Free Oil Oil & Grease > 200 meters - No Unreasonable Degradation	 § 308 BPT, BCT BAT § 403	 § 308 NSPS NSPS § 403, EIS
Deck Drainage Monitor Frequency/Flow Rate No Free Oil > 200 meters - No Unreasonable Degradation	 § 308 BCT, BAT § 403	 § 308 NSPS § 403, EIS
Produced Sand No Discharge Allowed	 BCT, BAT	 NSPS
Sanitary Waste (manned by 10 or more) Residual Chlorine > 200 meters - No Unreasonable Degradation	 BAT § 403	 NSPS § 403, EIS
Sanitary Waste (manned by 9 or less) No Floating Solids > 200 meters - No Unreasonable Degradation	 BCT § 403	 NSPS § 403, EIS
Domestic Waste No Foam No Floating Solids > 200 meters - No Unreasonable Degradation	 BAT BCT/BAT § 403	 NSPS NSPS § 403, EIS
Well Test Fluids Monitor Frequency/Flow Rate No Free Oil > 200 meters - No unreasonable Degradation	 § 308 BCT, BAT § 403	 § 308 NSPS § 403, EIS

<u>Miscellaneous Wastes:</u> Desalination Unit Discharge, Blow Out Preventer Fluids, Uncontaminated Ballast Water, Muds Cuttings & Cement at Seafloor, Uncontaminated Sea Water, Fire Test Water, Boiler Blowdown, Excess Cement Slurry, Diatomaceous Earth Filter Media, Uncontaminated Fresh Water, Noncontaminated Fresh Water		
No Free Oil	BCT, BAT	BPJ
> 200 meters - No unreasonable degradation	§ 403	§ 403

B. Area and Depth-Related Requirements

The discharge restrictions and requirements listed below are necessary to ensure that unreasonable degradation of these areas will not occur as discussed above in Part IV.B. of this fact sheet (Ocean Discharge Criteria) and are largely unchanged from the previous permit to this proposed Discharge within the area described below the 26^0 parallel is prohibited due to a order which establishes a moratorium on drilling activity on leases in that area.

Pertaining to all discharges, this NPDES general permit only provides coverage for discharges occurring:

- In water depths greater than 200 meters (as measured from mean low water)
- For leases not under any moratorium.

C. CWA Section 403(c) Requirements for Muds and Cuttings

Flow rates: In addition to restrictions on all discharges imposed under Section 403(c) of the CWA and discussed in section IV.B. of this fact sheet, discharges of water-based muds for both new and existing sources are limited to the following maximum rate. This limitation is identical to that contained in the previous general permit.

Flow = 1,000 bbl/hr on total water-based muds

This limit was established in the previous permit because reliable dispersion data are available only up to this discharge rate and because this rate did not represent any serious operational problem based on comments received from the industry and discharge monitoring reports.

VII. Other Legal Requirements

A. National Environmental Policy Act

Under the direction of the National Environmental Policy Act (NEPA), EPA and MMS entered into a Memorandum of Understanding to coordinate efforts on EISs for areas covered by NSPS before EPA issues final permits covering discharges. During

the permitting process for the previous general permit, EPA completed a draft EIS, and accepted public comment on that document. A final EIS was prepared before issuance of the final permit. EPA also coordinated with MMS for complying with NEPA for specific new source (production) projects. As part of the permitting process for this reissuance of the general permit, EPA completed a draft supplemental EIS.

B . Oil Spill Requirements

Section 311 of the Clean Water Act prohibits the discharge of oil and hazardous materials in harmful quantities. Routine discharges that are in compliance with NPDES permits are excluded from the provisions of section 311. However, the permits do not preclude the institution of legal action or relieve permittees from any responsibilities, liabilities, or penalties for other, unauthorized discharges of oil and hazardous materials that are covered by section 311 of the CWA.

C. Endangered Species Act

The Endangered Species Act (ESA) allocates authority to, and administers requirements upon, federal agencies regarding endangered species of fish, wildlife, or plants that have been designated as critical. Its implementing regulations (50 C.F.R. Part 402) require the Regional Administrator to ensure, in consultation with the Secretaries of Interior and Commerce, that any action authorized, funded or carried out by EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat [40 C.F.R. § 122.49(c)]. Implementing regulations for the ESA establish a process by which agencies consult with one another to ensure that issues and concerns of both the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) collectively are addressed. The NMFS and USFWS have responded to EPA's initiation of the coordination process under the regulations set forth by Section 7 of the Endangered Species Act. The 36 species identified by NMFS and USFWS as threatened or endangered species within the permit coverage area have been assessed

for potential effects from the activities covered by the draft permit in a biological assessment incorporated in the draft SEIS. This biological assessment has been submitted to the NMFS and USFWS along with the draft permit for consistency review and concurrence on the Region's finding of no adverse effect. The Region's finding is appended to the draft SEIS.

D. Ocean Discharge Criteria Evaluation

For discharges into waters located seaward of the inner boundary of the territorial seas, the CWA at Section 403, requires that NPDES permits consider guidelines for determining the potential degradation of the marine environment. The guidelines, or Ocean Discharge Criteria (40 C.F.R. Part 125, subpart M), are intended to "prevent unreasonable degradation of the marine environment and to authorize imposition of effluent limitations, including a prohibition of discharge, if necessary, to ensure this goal" (45 FR 65942, October 3, 1980). After all available comments and information are reviewed, the final 403 determination will be made.

A preliminary ODCE determination of no unreasonable degradation has been made by Region 4. The potential effects of discharges under the proposed permit limitations and conditions are assessed in this draft document available from Region 4. The ODCE states that, based on the available information, the permit limitations are sufficient to determine that no unreasonable degradation should result from the permitted discharges.

E. Coastal Zone Management Act

The coverage area of the draft general permit includes only Federal waters of the eastern Gulf of Mexico. However, the state waters of Florida, Alabama, and Mississippi are potentially affected by activities covered under the permit. Therefore, the coastal zone management plans of Florida, Alabama, and Mississippi have been reviewed for consistency and consultation with the states for consistency concurrence

has been initiated. A consistency determination for each state and the draft permit have been submitted for state review.

F. Marine Protection, Research, and Sanctuaries Act

No marine sanctuaries as designated by the Marine Protection, Research, and Sanctuaries Act exist in the area to which the OCS permit applies.

G. Executive Order 12291

OMB has exempted this action from the review requirements of Executive Order 12291 pursuant to section 8(b) of that order.

H. Paperwork Reduction Act

The information collection required by these permits has been approved by OMB under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, in submission made for the NPDES permit program and assigned OMB control numbers 2040-0086 (NPDES permit application) and 2040-0004 (DMRs).

All facilities affected by these permits must submit an NOI requesting coverage under the Eastern Gulf of Mexico OCS general permit no. GMG280000. EPA estimates that it will take an affected facility three hours to prepare the request for coverage.

All affected facilities will be required to submit DMRs. EPA estimated the DMR completion burden for the permit to be 36 hours per facility per year.

I. Regulatory Flexibility Act

After review of the facts presented above, I hereby certify, pursuant to the provisions of 5 U.S.C. 605(b), that this proposed general permit will not have a significant impact on a substantial number of small entities. This certification is based on the fact that the vast majority of the parties regulated by this permit have greater than 500 employees and are not classified as small businesses under the Small Business Administration regulations established at 49 FR 5024 *et seq.* (February 9, 1984). For those operators having fewer than 500 employees, this permit issuance will not have

significant economic impact. These facilities are classified as Major Group under Standard Identification Classification Code13 - Oil and Gas Extraction, Crude Petroleum and Natural Gas.

J. Unfunded Mandates Reform Act

Section 201 of the Unfunded Mandates Reform Act, (UMRA), P.L. 104-4, generally requires Federal agencies to assess the effects of their "regulatory actions" on State, local, and tribal governments and the private sector. This proposed permit is not a rule which is subject to the requirements of UMRA.

VIII. Proposed Schedule For Permit Issuance

Proposed Permit to Federal Register for Public Notice - Week of January 12, 2004

Public Hearings dates and location:

- March 16, 2004 at 6:00 pm in Ocean Springs, MS at the Gulf Coast Research Laboratory
- March 17, 2004 at 6:00 pm in Gulf Shores, AL at the Marroitt Courtyard Gulf Shores Craft Farms
- March 18, 2004 at 6pm in Pensacola, Florida at Booker T. Washington High School

Close Comment Period - March 19, 2004

Complete Review of Comments - Date To Be Determined

Consider Issuance of Final Permit - Date To Be Determined

Dated:

James D. Giattina, Director

Water Management Division

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Table 2. Effluent Limitations, Prohibitions, and Monitoring Requirements for the Eastern Gulf of Mexico NPDES General Permit Existing and New Sources using Synthetic Based Drilling Fluids

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monito	
			Measurement Frequency	S
Non-Aqueous Based Drilling Fluids	No discharge, except that which adheres to cuttings, de minimus discharges a			
Drill Cuttings Generated Using Non-Aqueous-Based Drilling	Cuttings from Oil-Based Drilling Fluids	No Discharge		
	Cuttings from Oil Contaminated Drilling Fluids	No Discharge		
	Cuttings Generated Using Mineral Oil	No Discharge		
	Cuttings Generated Using Drilling Fluids Which Contain Diesel Oil	No Discharge		
	Areas of Biological Concern or a Federally Designated Material Disposal Site	No discharge within 1000 meters.		
	Free Oil	No Discharge	Once/week	S m F
	Volume	Report	Once/month	E
	Formation Oil	No Discharge	GC/MS test once prior to drilling & RPE or GC/MS once/week.	G at P A S
	Suspended Particulate Phase Toxicity	30,000 ppm daily minimum 30,000 ppm monthly ave of minimum values	Once/month and Once/end of well[b]	G us *M b A b* 58

Discharge	Regulated & Monitored Discharge Parameter	Discharge Limitation/ Prohibition	Monito	
			Measurement Frequency	S
	Drilling Fluid Sediment Toxicity Ratio	1.0	Once/month by grab sample	A 9
	Polynuclear Aromatic Hydrocarbons (PAH)	1×10^{-5}	once per year on each fluid blend	E 1
	Sediment Toxicity Ratio	1.0	Once per year on each fluids blend	A 9
	Base Fluid Retained on Cuttings (C_{16-18} internal olefin)	6.9 g/100 g wet drill cuttings	once per day by grab sample, up to three sampling episodes per day	A M C S A
	Base Fluid Retained on Cuttings (C_{12-14} ester)	9.4 g/100 g wet drill cuttings	once per day by grab sample, up to three sampling episodes per day	A M C S A
	Biodegradation Rate	1.0	Once per year on each fluid blend	IS 1
	Mercury in Stock barite	1.0 mg/kg (dry wt.)	Representative sample of each stock barite prior to drilling	E m
	Cadmium in Stock barite	3.0 mg/kg (dry wt.)	Representative sample of each stock barite prior to drilling	E m

[a] Toxicity test to be conducted using suspended particulate phase (SPP) of a 9:1 seawater:mud dilution. The sample shall be taken beneath the shale shaker, or if there are no returns across the shaker, the sample must be taken from a location that is characteristic of the overall mud system to be discharged.

[b] Sample shall be taken after the final log run is completed and prior to bulk discharge.

[c] The daily maximum concentration may be based on the average of up to four grab sample results in the 24 hour period.

[d] When discharging and facility is manned. Monitoring shall be accomplished during times when observation of a visual sheen on the surface of the receiving water is possible in the vicinity of the discharge.

[e] No discharge of priority pollutants except in trace amounts. Information on the specific chemical composition shall be recorded but not reported unless requested by EPA.

[f] Any facility that properly operates and maintains a marine sanitation device (MSD) that complies with pollution control standards and regulations under Section 312 of the Act shall be deemed to be in compliance with permit limitations for sanitary waste. The MSD shall be tested yearly for proper operation and test results maintained at the facility.

Appendix A

Effluent concentrations at the edge of a 100-m mixing zone will be modeled by EPA for each *produced water* outfall listed in an operator's notice of commencement of production operations. This projected effluent concentration will be used to calculate the permit limitation for produced water toxicity (0.01 x projected effluent concentration). The discharge will be modeled using each facility's measured water column conditions and discharge configurations as input for the CORMIX 3.2 expert system for hydrodynamic mixing zone analysis.

The notice of commencement of production operations will be accompanied by a completed CORMIX 3.2 input parameter table presented as Table A-1. The input parameters required are the following.

Anticipated average discharge rate (bbl/day)
Water depth (meters)
Discharge pipe location in the water column (meters from surface or bottom)
Discharge pipe orientation with respect to the prevailing current (degrees; 0° is co-flowing)
Discharge pipe opening diameter (meters)

These parameters are site-specific parameters that the operator must determine through monitoring or measurement and certify as true to the best of their knowledge. All other input parameters for the CORMIX 3.2 model are established in Table 1 of Appendix B.

The Region will conduct the model using the operator's input parameters and report the toxicity limitation to the operator. If the parameters supplied by the operator change during the life of the permit (e.g., average discharge rate increases or decreases, a change in discharge pipe orientation, etc.), the operator should submit the new input parameters to the Region so that a new toxicity limitation can be calculated.

Compliance with the toxicity limitation will be demonstrated by conducting 96-hour toxicity tests using mysids (*Mysidopsis bahia*) and inland silverside minnows (*Menida beryllina*) each month. The LC_{50} for each $_{spe}$cies will be reported on the DMR and a copy of the complete laboratory report shall be submitted.

Table A-1. CORMIX Input Parameters for Toxicity Limitation Calculation

Permit number: GMG28_____
Company: _____
Contact name/Phone number: _____
Lease block/number: _____
Facility name: _____

Parameter **Units**
Discharge Rate ___ Average bbl/day
Water depth __ meters

Discharge pipe location in the water column

__ meters from ____ water surface, or ____ seafloor

Discharge pipe orientation with respect to the seafloor:

degrees (90° is directed toward the surface)
(-90° is directed toward the seafloor)

Discharge pipe opening diameter:

meters

Wind Speed

_____ m/sec

Appendix B

Table 1: CORMIX Ambient Input Parameters and Constant Discharge Input Parameters

Parameter	Units	Value
Surface Density (ρ_s)	kg/m^3	1023.00
Density Gradient ($\Delta\rho$)	$kg/m^3/m$	0.163 (Linear)
Current Speed for < 200 m	cm/sec	5
Current Speed for > 200 m	cm/sec	15
Wind Speed	m/sec	4
Darcy-Wiesbach Friction Factor (f)		0.02
Legal Mixing Zone	m	100
Discharge Density	kg/m^3	1070.2
Horizontal Discharge Angle (σ)	degrees	0
Vertical Discharge Angle (θ)	degrees	- 45

Table 2: Produce Water Discharge Pipe Diameters

Range on Table	Model Input	
(inches)	**(inches)**	**(meters)**
0 - 5	4	0.1016
>5 - 7	6	0.1524
>7 - 9	8	0.2032
>9 - 11	10	0.3048
>11 - 15	13	0.3302

Table 3: CORMIX Predicted Critical Dilutions (Percent Effluent) for Discharges with a Depth Difference Between the Discharge Pipe Outlet and the Sea Floor of Greater than 12 meters and in Waters Less than 200 meters

Discharge Rate	Pipe Diameter (inches)				
(bbl/day)	>0" to 5"	>5" to 7"	>7" to 9"	>9" to 11"	>11" to 15"
>0 to 500	0.11	0.11	0.11	0.11	0.11
501 to 1000	0.22	0.22	0.22	0.22	0.22
1001 to 2000	0.37	0.37	0.37	0.37	0.37
2001 to 3000	0.48	0.48	0.48	0.48	0.48
3001 to 4000	0.56	0.56	0.56	0.56	0.56
4001 to 5000	0.65	0.66	0.66	0.66	0.66
5001 to 6000	0.73	0.74	0.74	0.74	0.74
6001 to 7000	0.77	0.78	0.78	0.78	0.78
7001 to 8000	0.84	0.86	0.86	0.87	0.87

Table 4: CORMIX Predicted Critical Dilutions (Percent Effluent) for Discharges with a Depth Difference Between the Discharge Pipe Outlet and the Sea Floor of Greater than 12 meters and in Waters Greater than 200 meters

Discharge Rate	Pipe Diameter (inches)				
(bbl/day)	>0" to 5"	>5" to 7"	>7" to 9"	>9" to 11"	>11" to 15"
>0 to 500	0.08	0.08	0.08	0.08	0.08
501 to 1000	0.12	0.12	0.12	0.12	0.12
1001 to 2000	0.18	0.18	0.18	0.18	0.18
2001 to 3000	0.22	0.22	0.22	0.22	0.22
3001 to 4000	0.24	0.25	0.25	0.25	0.25
4001 to 5000	0.28	0.28	0.28	0.28	0.28
5001 to 6000	0.30	0.30	0.31	0.31	0.31
6001 to 7000	0.32	0.32	0.32	0.32	0.32
7001 to 8000	0.35	0.35	0.35	0.35	0.35

Table 5: Minimum Vertical Port Separation to Avoid Interference

Port Discharge Rate	Waters Less than 200 meters	Waters Greater than 200 meters
(bbl/day)	**(meters)**	**(meters)**
>0 to 500	3.0	3.0
501 to 1000	3.0	6.0
1001 to 2000	4.0	6.0
2001 to 5000	5.0	6.0
5001 to 7000	5.5	6.0
7001 to 10,000	6.0	6.0

Table 6: Critical Dilutions (Percent Effluent) for Toxicity Limitations for Seawater to which treatment chemicals have been added

Water Depth	Discharge Rate (bbl/day)	Pipe Diameter Range (actual diameter modeled)		
		>0 to 2" (1)	>2 to 4" (3)	>4 to 6" (5)
Less than 200 meters (shelf)	500 (0 to 1000)	0.29	0.81	1.23
	1000 (1000 - 2000)	0.31	0.86	1.34
	2000 (2000-4000)	0.34	0.88	1.43
	4000 (4000-8000)	0.33	0.98	1.48
	8000 (>8000)	0.29	1.02	1.68
Deeper than 200 meters (slope)	500 (0 to 1000)	0.32	1.03	1.65
	1000 (1000-2000)	0.28	0.99	1.65
	2000 (2000-4000)	0.24	0.89	1.57
	4000 (4000-8000)	0.20	0.78	1.42
	8000 (>8000)	0.17	0.66	1.24

Table 7: Critical Dilutions (Percent Effluent) for Toxicity Limitations for Freshwater to which treatment chemicals have been added

Water Depth	Discharge Rate (bbl/day)	Pipe Diameter (actual diameter modeled)		
		>0 to 2" (1)	>2 to 4" (3)	>4 to 6" (5)
Less than 200 meters (shelf)	500 (0 to 1000)	0.57	3.85	16.9
	1000 (1000 - 2000)	0.44	3.20	16.7
	2000 (2000-4000)	0.34	2.50	5.76
	4000 (4000-8000)	0.35	1.86	4.66
	8000 (>8000)	0.30	1.36	3.52
Deeper than 200 meters (slope)	500 (0 to 1000)	0.67	11.6	29.9
	1000 (1000 - 2000)	0.40	6.69	29.1
	2000 (2000-4000)	0.26	3.57	15.9
	4000 (4000-8000)	0.22	1.96	9.14
	8000 (>8000)	0.19	1.06	4.67